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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Makoto Iida

125664

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25944 7590 02/27/2009

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ALEXANDRIA, VA 22320-4850

EXAMINER

MALEKZADEH, SEYED MASOUD

ART UNIT

PAPER NUMBER

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DELIVERY MODE

02/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Advisory Action

The proposed amendments, filed on 02/02/2009, after a final rejection, mailed on 11/07/2008 **will not be entered** because the amendments to claims 10, 14, 18, 22, 26-27 raises new issues that would require further consideration and search.

Specifically the amendments to claim 10 **added new limitation** which require further search. Cited amendments such as in claim 10, “the single crystal is pulled while controlling a value of V/G ($mm^2 / K \bullet \min$) within a range of values of V/G ($mm^2 / K \bullet \min$)” (see lines 6-7) and “the range of values of V/G ($mm^2 / K \bullet \min$) is selected from the group consisting” have incorporated new claim language which have not previously been defined as comprising such a method step. The newly proposed limitations add “a range of values for the V/G ” into the claim 10 which changes the scope of the invention because prior to the current proposed amendments, claim 10 required only a value for the V/G ; however, now, in the proposed amendments, the claim requires a plurality of different values for the V/G .

Therefore, reconsideration of the prior arts of record, as well as, possible consideration of the other prior arts would be necessary to determine if the new claim language were not taught or suggested by the prior arts.

Response to Arguments

Applicant's arguments filed on 02/02/2009 have been fully considered but they **are not found persuasive**.

In response to the applicant's arguments that "in the method of claim 10, the value of V/G may be in any one of the above listed three ranges; the ranges are selected individually, not at the same time and, thus, the ranges are not inconsistent and do not contradict one another", The arguments are moot, as the amendment will not be entered. Furthermore, applicant's attention is drawn to the point that the claims also do not clearly and explicitly require the ranges to be selected individually, not at the same time.

Furthermore, in response to the applicant's argument that "the office action asserts that Iida fails to teach or suggest that the single crystal is pulled while controlling the value of (V/G) is inadequate," (See remarks, page 7, lines 10-13) and further, "the lowest V/G value that can be calculated with any one of the three recited ranges if (T_{\max}) is substituted with a temperature between 1400 °C to 1414 °C would be 0.286" (see remarks; page 7, lines 18-20)

Applicant's arguments was not found persuasive because applicant does not specify the obtained value of the 0.286 has a unit in ($\text{mm}^2 / ^\circ\text{C} \bullet \text{min}$) or a unit in ($\text{mm}^2 / ^\circ\text{K} \bullet \text{min}$). Applicants reminded that the equations as presented, for the range values of the V/G, are designed for the temperature in Kelvin and not in centigrade. Therefore, through proper conversion of temperature unit, as

Art Unit: 1791

also recited in the previous office action, Iida teaches the single crystal is pulled with controlling the value of F/G .

Moreover, in response to the applicant's argument that "the temperature range of 1400°C to 1414°C could not be the temperature range of (T_{\max}) because, according to the disclosure, (T_{\max}) has to be higher than the melting points of silicon." (See page 8, lines 3-5) and "Iida's range of 1414°C to 1420°C does not disclose a range of (T_{\max}) values", applicant's argument was not found persuasive because as also recited in the previous office action, Iida et al. (US '395) teach the melted silicon raw material is provided within a crucible, and further, a single crystal is pulled with a temperature within 1560°C to 1400°C. (See abstract, lines 51-67, column 7, and lines 1-13, column 8) Therefore, Iida et al. (US '395) clearly teach a highest temperature of the melt inside of the crucible.

Also, in response to the applicant's argument that "the office action fails to provide a reason to combine Kitamura's deficient teachings with Iida", applicant's argument was not found persuasive because, as recited also in the previous office action, there is a strong motivation to combine Iida et al ('395) with Kitamura et al. ('944) in order to provide a heat insulating material between the crucible and the heater in order to stably growing a high quality and longitudinal crystal by rotation pulling.

Moreover, in response to the applicant's argument that the combination of Iida and Kitamura is improper, applicant's argument was not found persuasive because as recited in the previous office action, Iida and Kitamura both teach a similar process steps for producing single crystals since both of these references include the step of immersing a seed crystal into a raw material melt and further growing a single crystal by rotating and pulling the seed crystal. Furthermore, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992)

Therefore, rejections of claims 10, 14, 18, 22, and 26-27 are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Masoud Malekzadeh whose telephone number is 571-272-6215. The examiner can normally be reached on Monday – Friday at 8:30 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin, can be reached on (571) 272-1189. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

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/SEYED M. MALEKZADEH/

Examiner, Art Unit 1791

/ Carlos Lopez/

Primary Examiner, Art Unit 1791